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in the following listed application(s) or patent(s) for which the issue fee has been paid.

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(12) **United States Patent**  
**Murakami et al.**(10) **Patent No.:** **US 7,821,065 B2**  
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- (54)
- SEMICONDUCTOR DEVICE COMPRISING A THIN FILM TRANSISTOR COMPRISING A SEMICONDUCTOR THIN FILM AND METHOD OF MANUFACTURING THE SAME**

- (75)
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- Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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- Int. Cl.**
- 
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- ..... 257/347; 257/59; 257/72;
- 
- 257/E29.151

- (58)
- Field of Classification Search**
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See application file for complete search history.

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(57) **ABSTRACT**

An object of the present invention is to provide a semiconductor device having high operation characteristic and reliability.

The measures taken are: A pixel capacitor is formed between an electrode comprising anodic capable material over an organic resin film, an anodic oxide film of the electrode and a pixel electrode above. Since the anodic oxide film is anodically oxidized by applied voltage per unit time at 15 V/min, there is no wrap around on the electrode, and film peeling can be prevented.

**66 Claims, 33 Drawing Sheets**